

CHAPTER 25

GYPSUM BOARD AND PLASTER

780 CMR 2501.0 GENERAL

2501.1 Scope: The provisions of 780 CMR 25 shall govern the materials, design, construction and quality of gypsum and plaster.

780 CMR 2502.0 SHEAR WALLS

2502.1 General: Wood frame shear walls constructed in accordance with the materials and provisions of Table 2502.1 are permitted to resist wind and seismic forces. Where such construction is designed to resist seismic forces, the panel size and

arrangement provisions of 780 CMR 2306.4.7 shall be met in addition to 780 CMR 2502.0.

2502.1.1 Nailing: All studs, top and bottom plates and blocking shall be nailed in accordance with Table 2502.1.

2502.1.2 Limitations: Shear walls shall not be used to resist horizontal *loads* from masonry or concrete walls.

Table 2502.1
SHEAR CAPACITY FOR SHEAR WALLS OF LATH AND PLASTER,
GYPSUM SHEATHING BOARD, AND GYPSUM WALLBOARD WOOD FRAME ASSEMBLIES^b

Type of material		Thickness of material (inch)	Wall construction	Nail spacing maximum (inches)	Allowable shear pounds per foot of wall ^a	Fastener size
Woven or welded wire lath and portland cement plaster		?	Unblocked	6	180	No. 11 gage, 1½ inches long, 7/16-inch head, or No. 16 gage staples having ?-inch-long legs
Gypsum lath, plain or perforated		? lath and ½ plaster	Unblocked	5	100	No. 13 gage, 1? inches long, 19/64- inch head, plasterboard blued nail
Gypsum sheathing board	2 feet x 8 feet	½	Unblocked	4	75	No 11 gage, 1¾ inches long, 7/16-inch head, diamond point, galvanized
	4 feet x 8 feet		Blocked	4	175	
	4 feet x 8 feet		Unblocked	7	100	
		½	Unblocked	7	100	5d cooler nails
			Unblocked	4	125	
			Blocked	7	125	
			Blocked	4	150	
			Blocked	4	175	6d cooler nails
Gypsum wallboard		?	Blocked two ply	Base ply 9 inches Face ply 7 inches	250	Base ply - 6d cooler nails Face ply - 8d cooler nails

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Note a. Shear values are based on a maximum framing spacing of 16 inches (406 mm) on center.

Note b. 1 inch = 25.4 mm; 1 foot = 304.8 mm; 1 pound per foot = 1,489 kg/m.

780 CMR 2503.0 GYPSUM BOARD MATERIALS

2503.1 General: All gypsum board materials and accessories shall be marked to indicate the appropriate standards referenced in 780 CMR 2503 and stored so as to protect such materials from the weather.

**Table 2503.2
GYPSUM BOARD MATERIALS AND ACCESSORIES**

Material	Standard
Gypsum sheathing Gypsum wallboard	ASTM C79 ASTM C36
Joint reinforcing tape and compound Nails for gypsum boards Steel screws	ASTM C474; C475 ASTM C514 ASTM C1002; C954
Steel studs, nonloadbearing Water-resistant gypsum backing board	ASTM C645 ASTM C630

2503.2 Standards: All gypsum board materials shall conform to the appropriate standards listed in Table 2503.2 and *Appendix A*.

2503.3 Installation: Installation of these materials shall conform to 780 CMR 2504.0 and Table 2503.3, except as otherwise required by 780 CMR.

2503.4 Water-resistant gypsum backer board: In all areas subjected to repeated damp conditions and moisture accumulation such as bathtub and shower compartments, water-resistant gypsum backer board complying with ASTM C630 listed in *Appendix A* shall be used as a substratum unless protected with a moistureproof and vaporproof covering.

**Table 2503.3
MAXIMUM SPACING OF GYPSUM WALLBOARD FASTNERS**

Thickness of gypsum wallboard (inch)	Plane of framing surface	Long dimension of gypsum wallboard sheets in relation to direction of framing members	Maximum spacing of framing members (center-to-center in inches)	Maximum spacing of fasteners (center-to-center in inches)		Nails ^a to wood
				Nails ^{a,b}	Screws ^c	
1/2	Horizontal	Either direction	16	7	12	No 13 gage, 1 7/8" long 19/64" head, /0.098 inch diameter, 1 1/4" long, Annular ringed, 5d cooler nail
	Horizontal	Perpendicular	24	7	12	
	Vertical	Either direction	24	8	12	
	Horizontal	Either direction	16	7	12	No. 13 gage, 1 7/8" long,

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?	Horizontal	Perpendicular	24	7	12	19/64" head, 0.098 inch diameter, 1?" long, Annular ringed, 6d cooler nail.
	Vertical	Either direction	24	8	12	

Fastening required with adhesive application

1/2 or ?	Horizontal	Either direction	16	16	16	As required for 1/2" and ?" gypsum wallboard, see above
	Horizontal	Perpendicular	24	12	16	
	Vertical	Either direction	24	16	24	
2 layers each ?" (3/4 total)	Horizontal	Perpendicular	24	16	16	Base ply nailed as required for 1/2" gypsum wallboard and face ply placed with adhesive
	Vertical	Either direction	24	24	24	

Note a. Where the metal framing has a clinching design formed to receive the nails by two edges of metal, the nails shall not be less than ? inch longer than the wallboard thickness, and shall have ringed shanks. Where the metal framing has a nailing groove formed to receive the nails, the nails shall have barbed shanks or be 5d cooler nails (No 13½ gage, 1? inches long, 15/64-inch head) for ½-inch gypsum wallboard (No. 13 gage, 1? inches long, 15/64-inch head) for ?-inch gypsum wallboard.

Note b. Two nails at two inches to 2½ inches apart are permitted to be used if the pairs are spaced 12 inches center-to-center except around perimeters.

Note c. Screws shall be No. 6 with tapered head and long enough to penetrate into wood framing not less than ? inch and metal framing not less than ¼ inch.

Note d. For fire-resistance rated construction assemblies, see the pertinent fire test information.

Note e. 1 inch = 25.4 mm.

GYPSUM BOARD AND PLASTER

**780 CMR 2504.0 GYPSUM
CONSTRUCTION**

2504.1 General: Gypsum board and plaster construction shall be of the materials listed in Table 2503.2 and Table 2505.2. These materials shall be assembled and installed in compliance with the appropriate standards listed in Table 2504.1 and *Appendix A*.

**Table 2504.1
INSTALLATION OF GYPSUM
CONSTRUCTION**

Material	Standard
Gypsum plaster	ASTM C842
Gypsum veneer base	ASTM C844
Gypsum veneer plaster	ASTM C843
Interior lathing and furring	ASTM C841
Steel framing for gypsum boards	ASTM C754; C1007

2504.2 Limitations: Gypsum construction shall not be used in any exterior location where such gypsum construction will be exposed directly to the weather.

2504.3 Inspection: The building official shall be notified not less than 24 hours in advance of all plastering work or installation of any gypsum board except gypsum lath. Plaster shall not be applied until after the lathing or other plaster base has been inspected and approved.

2504.4 Weather protection: When plastering work is in progress, the building or structure shall be enclosed and conditioned to provide proper *ventilation* and temperatures not less than 40°F (4°C) nor more than 80°F (27°C) from one week prior to the plastering operation and until one week following or until the plaster is dry.

**780 CMR 2505.0 INTERIOR LATHING
AND GYPSUM PLASTERING**

2505.1 General: All interior lathing and gypsum plastering materials and accessories shall be marked to indicate the appropriate standards referenced in 780 CMR 2505.0 and stored in such a manner as to protect them from the weather.

2505.2 Standards: All interior lathing and gypsum plastering materials shall conform to the standards listed in Table 2505.2 and *Appendix A* and, where required for fire protection, shall also conform to the provisions of 780 CMR 7.

**Table 2505.2
PLASTERING MATERIALS AND
ACCESSORIES**

Exterior
Gypsum
Gypsum
Gypsum
Gypsum
Gypsum
Interior t
Lime pla
Metal lat
Plaster a
Sand
Perlite
Vermic
Portland
Steel stu
Steel scr
Welded v

2505.3 Installation: Installation of interior lathing and gypsum plastering materials shall conform to 780 CMR 2504.0.

**780 CMR 2506.0 PORTLAND CEMENT
STUCCO LATHING AND PLASTERING**

2506.1 General: All exterior and interior portland cement stucco lathing and plastering shall be done

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with the appropriate materials listed in Table 2505.2 and *Appendix A*.

2506.2 Weather protection: All materials shall be stored in such a manner as to protect such materials from the weather.

2506.3 Installation: Installation of these materials shall be in compliance with ASTM C926 and ASTM C 1063 listed in and 780 CMR 2506.4.

2506.4 Protection after application: At all times during application and for a period of not less than 48 hours after application of each coat, provisions shall be made to keep stucco work above 40°F (4°C).

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